

HBD Gain Correction

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<https://www.phenix.bnl.gov/phenix/WWW/p/draft/jiayin/html/panametrics/>

HBD Panametrics History

Database last updated on "2009-02-10 22:56:29"

<u>Type of Plot</u>	<u>WEST</u>	<u>EAST</u>
H ₂ O (ppm)	<input type="checkbox"/>	<input type="checkbox"/>
O ₂ (ppm)	<input type="checkbox"/>	<input type="checkbox"/>
Temperature (°C)	<input type="checkbox"/>	<input type="checkbox"/>
Pressure (torr)	<input type="checkbox"/>	<input type="checkbox"/>
P/T (Torr/Kelvin)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Gain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
H ₂ O input gas	<input type="checkbox"/>	
O ₂ input gas	<input type="checkbox"/>	
Pressure in IR	<input type="checkbox"/>	

☐ Use Run Number

or :

Date Range (mm-dd-yyyy)

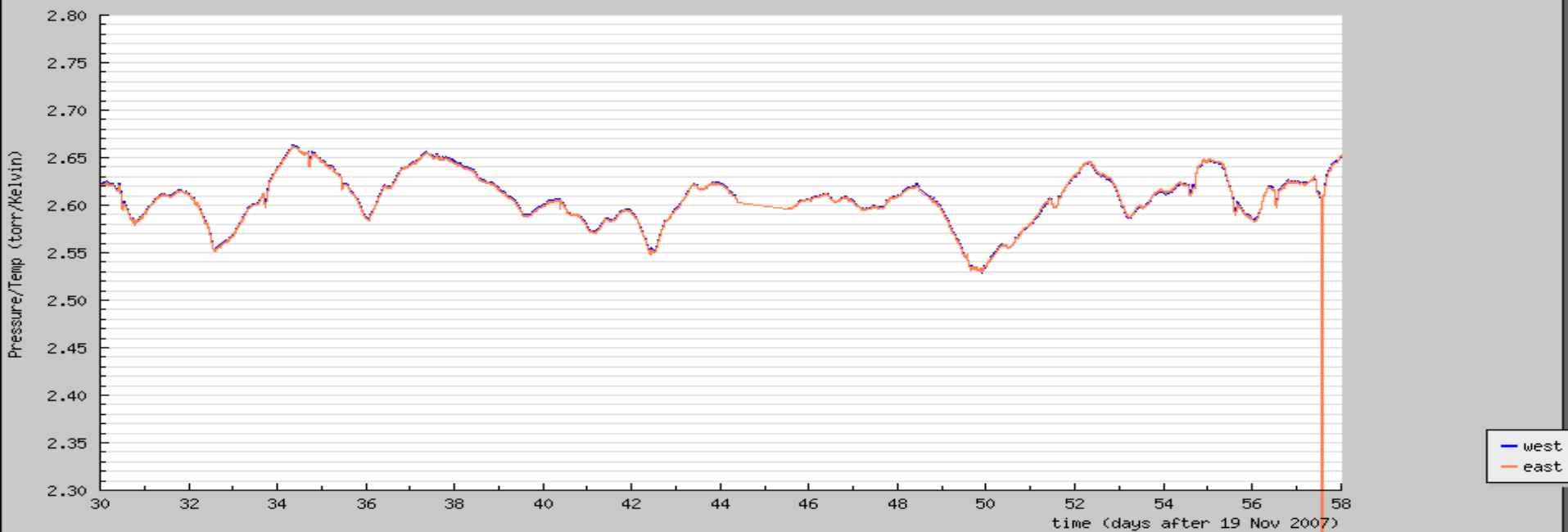
to

Time Range:

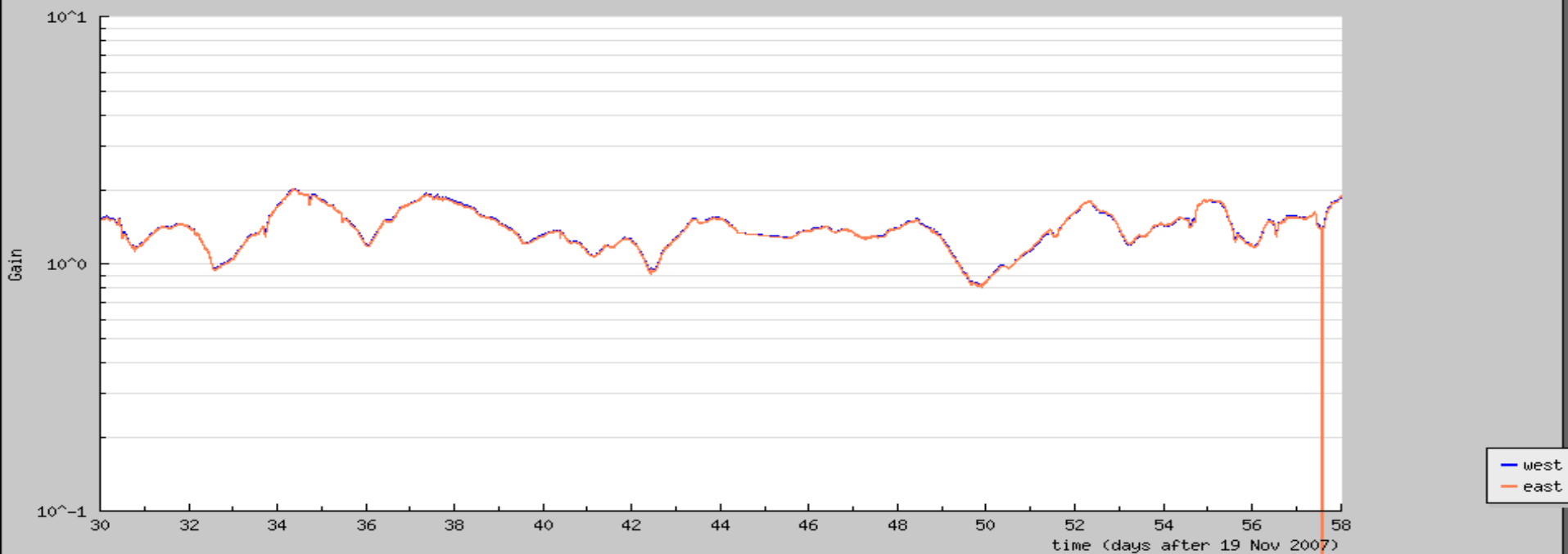
to

☒ Show txt values in table

12-18-2008 23:59:34 - P over T - 2009-01-16 00:00:10



12-18-2008 23:59:34 - Gain vs Time - 2009-01-16 00:00:10



Gain Correction

- Found out the P/T range.
- Divided the P/T range into 5 regions.
- For each region, applied a specific correction of gain.
- Limit the gain variation with P/T within a band of +/- 10% around 1.

$$Gain(P/T) = \exp(6.846 \times (P/T - 2.56))$$

	P/T (Torr/Kelvin) West	P/T (Torr/Kelvin) East	Gain West	Gain East
Min	2.529	2.529	0.809	0.809
Max	2.664	2.66?	2.032	2.020
Average	2.609	2.609	1.406	1.400

Cut the P/T range into 5 equal regions, apply a gain correction for each region.

P/T region cutoffs (Torr/K)	Region Number	Mid-Point in the Region	Correction (1/Gain) (Calculated from Mid-Point)
2.529	1	2.542 →	1.128
2.556	2	2.569 →	0.938
2.583	3	2.596 →	0.780
2.610	4	2.623 →	0.649
2.637 (2.664)	5	2.650 →	0.540

